

## CLAIMS

1. Basic cobalt(II) carbonate, agglomerated from fine primary particles and of general composition  $\text{Co}[(\text{OH})_2]_a[\text{CO}_3]_{1-a}$ , where  $0.1 \leq a \leq 0.9$ , characterised in that the agglomerates have a spheroidal habit and the average agglomerate diameter is 3 to 50  $\mu\text{m}$ .  
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2. Basic cobalt(II) carbonate agglomerates according to claim 1, characterised in that the agglomerate diameter is 5 - 20  $\mu\text{m}$ .  
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3. Basic cobalt(II) carbonate agglomerates according to either one of claims 1 or 2, characterised in that they have tap densities of  $\geq 1.6 \text{ g/cm}^3$  and bulk densities of  $\geq 1.2 \text{ g/cm}^3$ .
- 15 4. A process for producing basic cobalt(II) carbonate agglomerates according to one or more of claims 1 to 3, characterised in that aqueous solutions of cobalt salts of general formula  $\text{CoX}_2$ , where X represents  $\text{Cl}^-$ ,  $\text{NO}_3^-$  and/or  $\frac{1}{2} \text{SO}_4^{2-}$ , are reacted with aqueous solutions or suspensions of alkali and/or ammonium carbonates and/or hydrogen carbonates at temperatures between 40 and 100°C, preferably 60 to 90°C, and the resulting basic cobalt(II) carbonate agglomerates are subsequently filtered off and washed until they are neutral and free from salts.  
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- 25 5. A process for producing agglomerated cobalt(II) hydroxide, characterised in that basic cobalt(II) carbonate agglomerates according to one or more of claims 1 to 4 are reacted in suspension with aqueous alkaline liquors and/or ammonia.
- 30 6. Cobalt(II) hydroxide, obtainable according to one or more of claims 4 or 5, characterised in that it consists of spheroidally agglomerated, polygonal, lamellar primary particles which have average diameters of 0.3  $\mu\text{m}$  to 1.5  $\mu\text{m}$  and diameter to thickness ratios between 3 and 15.  
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7. Cobalt(II) hydroxide according to claim 6, characterised in that the spheroidal agglomerates have an average diameter of 3 - 50  $\mu\text{m}$ , preferably 5 - 20  $\mu\text{m}$ .

8. Cobalt(II) hydroxide according to either one of claims 6 or 7, characterised in that it has tap densities of  $\geq 1$  g/cm<sup>3</sup>.
- 5 9. Use of the basic cobalt(II) carbonate agglomerates according to one or more of claims 1 to 4 for the production of spheroidal, free-flowing cobalt(II) oxide and higher oxides.
- 10 10. Use of the basic cobalt(II) carbonate agglomerates according to one or more of claims 1 to 4 for the production of pure cobalt(II) salts for use in catalyst technology or in bonding agents.
- 15 11. Use of cobalt(II) hydroxides according to one or more of claims 5 to 8 as components of the nickel oxide electrode in alkaline secondary cells.
20. 12. Use of cobalt(II) hydroxide according to one or more of claims 5 to 8 for the production of pure cobalt(II) salts for use in bonding agents and catalysts.
25. 13. Use of cobalt(II) hydroxide according to one or more of claims 5 to 8 for the production of spheroidal, free-flowing cobalt(II) oxide or higher oxides by calcination.
14. Use of basic cobalt(II) carbonate agglomerates according to one or more of claims 1 to 4 and/or cobalt(II) hydroxide according to one or more of claims 5 to 8 for the production of cobalt pigments.